of it as a dark spot. III and IV transit as dark or black spots, more frequently than would be supposed.

The following were the observations of the satellite as it left the planet:

Internal contact.....	7^h	19^m	21^s	Mt. Hamilton	m. t.
One-half off.....	7	21	5	"	"
External contact.....	7	25	55	"	"

According to American Ephemeris, the egress should have been at $7^h\ 26.7^m$, Mt. Hamilton m. t. E. E. B.

MT. HAMILTON, Sept. 3, 1890.

DARK TRANSITS OF *JUPITER'S* FIRST SATELLITE.

A dark transit of *Jupiter's* first satellite occurred on the evening of August 23d. As this was a public night at the Observatory, it was not possible to observe the phenomenon properly; but from such views as were obtained from time to time with the thirty-six-inch equatorial, the satellite, which near the limb of *Jupiter* appeared as a bright white spot, reached equality of brightness with the surface of the planet at about one-fifth of its path on the disc from the limb, and near the center of the disc appeared as a round pale, grayish spot. At egress the order of appearances was reversed.

The satellite traversed the northern half of the white equatorial zone. Its shadow, which was projected on the same belt, was perfectly black.

Almost the same phenomena were observed in the transit of the first satellite on August 30th. J. E. K.

A POSSIBLE EXPLANATION OF THE DARK TRANSITS OF THE SATELLITES OF *JUPITER*.

The phenomena presented by the dark transits of *Jupiter's* satellites are among the most puzzling in the solar system, and any explanation which does not do violence to known natural laws, and is within the bounds of ordinary probability, must be regarded as entitled to some amount of consideration. It is from this standpoint that I wish to present the following as, at least, a possible explanation.

The principal facts to be accounted for are these:

1. In ordinary transits, the satellite is bright when projected upon the surface of *Jupiter* near the limb, and is usually lost sight of when it reaches the central parts of the disc.

2. Occasionally the satellite appears darker than the surface of *Jupiter* when in transit, even when projected on the brightest parts